

What is claimed is:

1. An electric motor, comprising:
  - a stator;
  - a winding board disposed on the stator,
  - a switch disposed on the winding board;
  - a fuse disposed on the winding board and including an input terminal and an exit terminal;  
a first magnet wire, a portion of the first magnet wire forming a first pole and extending from the first pole across the input terminal and the exit terminal of the fuse and being terminated at the switch, the first magnet wire being severed between the input terminal and the exit terminal.
2. The motor of claim 1, further comprising at least one clip disposed on the winding board to route the first magnet wire on the winding board.
3. The motor of claim 1, wherein the stator includes a first projection, the winding board including a first lug, the first pole being wound about the first projection and the first lug.
4. The motor of claim 3, wherein the stator and the winding board are secured together by at least the first pole.
5. The motor of claim 1, wherein the switch includes an internal terminal and an external terminal, each terminal includes at least one tang terminal for connection to wires.
6. The motor of claim 5, wherein the fuse includes at least one tang terminal

7. The motor of claim 1, further comprising a second magnet wire, a portion of which forms a second pole.

8. The motor of claim 7, wherein the winding board includes a second lug, the stator includes a second projection, and the second pole is wound about the second lug and the second projection.

9. The motor of claim 8, wherein the stator and the winding board are secured together by at least the first pole.

10. The motor of claim 9, wherein the internal terminal of the switch includes a first block and a second block, the first magnet wire is attached to the first block, and the second magnet wire is attached to the second block.

11. A method of making an electric motor, comprising:

winding a first magnet wire about a first lug in a winding board and a first protrusion in a stator, the winding board being disposed on the stator and including a switch having at least an internal terminal, and a fuse having an input terminal and an exit terminal;

laying the first magnet wire across an exit terminal and an input terminal on the fuse;

terminating the first magnet wire at the switch; and

severing the first magnet wire between the input terminal and the exit terminal on the fuse.

12. The method of claim 11, further comprising routing the first magnet wire along the winding board under clips.

13. The method of claim 11, wherein the switch includes an internal terminal and an external terminal, the internal terminal includes a first block and a second block, and the first magnet wire is terminated on the first block.

14. The method of claim 13, wherein the first block and the second block include tang terminals and the first magnet wire is fused to the tang of the first block by welding.

15. The method of claim 11, wherein the input terminal and the exit terminal include tangs, and the first magnet wire is fused to the tangs by welding.

16. The method of claim 11, further comprising winding the first magnet wire about the first lug in the winding board and the first protrusion in the stator to form a first pole.

17. The method of claim 11, further comprising winding a second magnet wire about a second lug in the winding board and a second protrusion in the stator to form a second pole.
18. The method of claim 17, further comprising disposing the end of the second magnet wire on the second block of the internal terminal.
19. The method of claim 18, further comprising fusing the second magnet wire to the tang of the second block by welding.

20. An electric motor, comprising:
  - a stator;
  - a winding board disposed on the stator and including a switch with tang-type connectors and a fuse with tang-type connectors; and
  - a lower housing disposed on the winding board and including a first brush housing and a second brush housing, a first dual tang terminal and a second dual tang terminal, a first brush wire connecting the first dual tang terminal to the first brush housing and a second brush wire connecting the second dual tang terminal to the second brush housing.
21. The motor of claim 20, further comprising a first magnet wire connected at one end to the switch, and at a second end to the first dual tang terminal.
22. The motor of claim 21, wherein the first magnet wire is further disposed across the tangs of the fuse, and the first magnet wire is severed between the two tangs of the fuse.
23. The motor of claim 21, wherein the first magnet wire forms a first pole.
24. The motor of claim 21, wherein the winding board includes a first lug, the stator includes a first protrusion, and the magnet wire is wrapped around the first lug and the first protrusion to form the first pole.
25. The motor of claim 20, wherein the first dual tang terminal is disposed on the first brush housing and the second dual tang terminal is disposed on the second brush housing.

26. The motor of claim 25, wherein the first dual tang terminal includes two tangs that are electrically connected.

27. The motor of claim 26, wherein the second dual tang terminal includes two tangs that are electrically connected.

28. A method of assembling an electric motor, the electric motor comprising an axis of rotation, an armature, a lower housing with a bearing, at least one brush housing, a brush disposed in the brush housing and urged toward the axis of rotation by a spring loaded member, the method comprising:

disposing a blocker into apertures in the brush housing to maintain the brush away from the axis of rotation; and

inserting the armature into the lower housing and into contact with the blocker so as to push the blocker out of the brush housing and release the brush to move inward into contact with the armature.

29. The method of claim 28, wherein the blocker is a wireform.

30. A system of wiring for an electric motor, the system comprising:

a stator including a first protrusion and a second protrusion;

a winding board including a first lug and a second lug;

a lower housing including a first brush housing and a second brush housing, a first dual tang terminal disposed on the first brush housing, and a second dual tang terminal disposed on the second brush housing,

a switch disposed on the winding board, the switch including an internal terminal with a first block and a second block;

a fuse disposed on the winding board and including an input terminal and an exit terminal;

a first magnet wire with a first end and a second end, the first end of the magnet wire being disposed on the first block, a portion of the magnet wire disposed across the input terminal and the exit terminal, a portion of the magnet wire forming a first pole, and the second end of the magnet wire being disposed on the first dual tang terminal; and

wherein the portion of the magnet wire disposed between the input terminal and the exit terminal is severed.

31. The system of claim 30, further comprising a second magnet wire having a first end and a second end, the first end of the second magnet wire being disposed on the second dual tang terminal
32. The system of claim 31, wherein the second end of the second magnet wire is disposed on the second block.